

## Claims

1030

What is claimed is:

1035

1040

1045

1050

1055

1. A method for designing a text symbol set to withstand partial obscuration wherein
  - a. an initial character set is created;
  - b. at least three regions of each character are selected;
  - c. for each character individually, one of the at least three regions of the character is obscured;
  - d. compute the correlation coefficients for all selected regions;
  - e. adjust the character set design to produce maximum overall character detection accuracy with one region obscured.
2. A method for region design in a regionalized character recognition system comprising:
  - a. selecting a character set design;
  - b. defining at least three sub-regions for each character template;
  - c. for each character, obscure one of the three regions;
  - d. compute the correlation coefficients for the entire character set
  - e. adjust the regions shape and overlap to produce maximum overall character detection.
3. A method for weight learning in a regionalized character recognition system comprising:
  - a. selecting a character set design;
  - b. defining at least three sub-regions for each character template;
  - c. for each character, obscure one of the three regions;
  - d. compute the correlation coefficients for the entire character set

Robust Method for Automatic Reading of Skewed, Rotated or Partially Obscured  
Characters

e. adjust the weights to produce maximum overall character detection.

1060 4. The method of claim 1 wherein the sub-regions are selected as pixels within the  
input image.

5. The method of claim 2 wherein the weights are character feature template  
weights.

1065

6. The method of claim 1 wherein the a-priori estimates of application regional  
obscuration probability characteristics are used in evaluating maximum overall  
character detection.

1070